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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/686,004	10/14/2003	Xuefeng T. Tao	GP-304192	5851
7590	02/27/2006		EXAMINER	
Leslie Hodges General Motors Corporation, Legal Staff Mail Code: 482-C23-B21 P.O. Box 300 Detroit, MI 48265-3000			LOUIS JACQUES, JACQUES H	
			ART UNIT	PAPER NUMBER
			3661	
DATE MAILED: 02/27/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/686,004

Applicant(s)

TAO ET AL.

Examiner

Jacques H. Louis-Jacques

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 5-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on January 24, 2006 has been entered.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-3, 5-6, and 8-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, line 4, the limitation "said preselected transmission member" lacks clear antecedent basis.

In claim 5, line 8, the limitation "the preselected transmission member" lacks clear antecedent basis.

In claim 5, it is not clear what the speed of the transmission member is. The claim recites a first step of "providing as the speed of the transmission member a first speed signal calculated from at least one output from a redundant pair of rotation sensors..." and a second step of "providing as the speed of the transmission member a second speed signal

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calculated from electrical phase information of said at least one electric motor and an effective rotation ratio...” It appears from the claim that the transmission would have two different speeds at the same time.

In claim 8, line 14, the limitation “the one of the first...” lacks clear antecedent basis.

The remaining claims not directly mentioned above are also rejected based on their dependency.

Appropriate correction is required.

Response to Amendments & Arguments

4. The amendments and arguments filed along with the RCE have been entered and carefully considered by the examiner.

In particular, Applicant has amended the claims to recite that one of the speed of the transmission member is “calculated from electrical phase information of said at least one electric motor...”

According to Applicant, both Kuras and Nawa disclose using speed sensing hardware for determining the speed of the transmission member. Applicant argued, “Nowhere does either reference disclose using electrical phase information in calculating transmission member...” Emphasis added.

The examiner agrees with Applicant. However, such feature is well known in the art. In fact, Applicant describes determining the speed of the transmission based on electrical phase information of the motor as of the known art. See last sentence of paragraph [0030] and paragraph [0040] of the present application.

Applicant also contended that “there is no analogous” between the present application and applied references. Applicant also argued that “there is no motivation” to combine the references. Emphasis added.

The examiner respectfully disagrees.

It is totally agreed that the examiner must determine what is “analogous prior art” for the purpose of analyzing the obviousness of the subject matter at issue. However, as set forth in MPEP 2141.01(a), “In order to rely on a reference as a basis for rejection of an applicant’s invention, the reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the inventor was concerned.” *In re Oetiker*, 977 F.2d 1443, 1446, 24 USPQ2d 1443, 1445 (Fed. Cir. 1992). See also *In re Deminski*, 796 F.2d 436, 230 USPQ 313 (Fed. Cir. 1986); *In re Clay*, 966 F.2d 656, 659, 23 USPQ2d 1058, 1060-61 (Fed. Cir. 1992). In the present case, both patents to Kuras and Nawa are at least in the field of applicant’s endeavor.

The examiner also recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the references provide proper motivation to combine.

In light of the above, the claims remain rejected as set forth below.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-3, 5-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuras et al [6,343,250] in view of Nawa et al [5,060,176] and Applicant's admitted conventional art.

Kuras et al discloses a method and apparatus for smoothing the output of a hydrostatic transmission near zero speed. The method and apparatus, according to Kuras et al, determine the speed of a transmission member in a hybrid powertrain, which includes a hybrid transmission (e.g., 16) having at least one motor (e.g., 52) operatively coupled to the transmission member and at least one rotation sensor (e.g., 76, 80) for operatively sensing rotation of said preselected transmission member. See figure 1. According to Kuras et al, there is provided providing a first signal indicative of the speed of the transmission member calculated from the output from the at least one rotation sensor and providing a second signal indicative of the speed of the transmission member calculated from the speed of the at least one motor and an effective rotation ratio between the transmission member and the at least one motor. See column 5, lines 49-67 and column 6, lines 1-11. According to Kuras et al, the transmission member comprises an output member (column 5, lines 62-64) and the speed of the at least one motor is provided by a motor controller (column 6, lines 25-31). In addition, Kuras et al discloses conditions indicating that the first signal is unreliable based on the speed of the transmission

member below a predetermined threshold and a loss of sensor output (column 7). Kuras et al discloses that either of the transmission speeds can be used as the transmission speed (column 5, lines 65-67). One of ordinary skill in the art would be motivated to select one of the transmission speeds in order to eliminate a discontinuity in the speed of the transmission and thereby control thereby the transmission speed. However, Kuras et al discloses a hydraulic motor as opposed to an electric motor. Nawa et al, on the other hand, discloses an electric motor powered testing apparatus for automotive power transmission using of an electric motor instead of a hydraulic motor. According to Nawa et al, there is provided a power source unit employing a motor, such as electric motor, hydraulic motor and so forth. See column 1. Also according to Nawa et al, there is provided a sensor for monitoring revolution speed at the input of the transmission, such as a revolution speed sensor. The revolution speed sensor monitors revolution speed at the input of the transmission to produce a sensor signal representative of the revolution speed at the input side of the transmission. See column 4, lines 23-25. Nawa et al also monitors a speed of the output shaft of the transmission. The transmission testing apparatus, according to Nawa et al comprises an electric motor and a motor control unit that controls the electric motor. See column 4, lines 19, 44-46 and columns 5-6. Neither Kuras et al nor Nawa et al particularly discloses using electrical phase information of the electric motor to determine the speed of the transmission member. However, the use of electrical phase information of the motor to determine the speed of the transmission member is well known in the art as recognized in the disclosure of the present application. More particular, the present application describes that individual motor speed

signals Na and Nb ... are also derived by the DPIM 19 from the motor phase information or conventional rotation sensors. According to the admitted art, motor speeds are derived in a conventional fashion by DPIM 19 using motor phase information. See paragraphs [0030], [0040]. The use of variable reluctance sensor is also well known in the art. See paragraph [0004]. Thus, it would have been obvious to one skilled in the art at the time of the invention to be motivated to modify the method and apparatus for smoothing the output of the transmission of Kuras et al by incorporating the electric motor as used in the transmission testing of Nawa et al because such modification would provide a system that is applicable to a wider range engine capacities, while providing a more reliable and efficient system. Also, the use of electrical phase information of motor as discussed in the conventional art in combination with the teachings of Kuras et al and Nawa et al would provide a more accurate transmission member speed detection and more efficient fault detection.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jacques H. Louis-Jacques whose telephone number is 571-272-6962. The examiner can normally be reached on M-Th 5:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Black can be reached on 571-272-6956. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jacques H Louis-Jacques
Primary Examiner
Art Unit 3661

/jlj

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